CLAIMS

1. A cGMP-visualizing probe, comprising:
a polypeptide that binds specifically to cGMP; and
two chromophores with different fluorescence wavelengths, which are each linked separately to the two terminals of the polypeptide.

2. The cGMP-visualizing probe of claim 1, wherein the polypeptide that binds specifically to cGMP is a cGMP-binding protein.

3. The cGMP-visualizing probe of claim 2, wherein the polypeptide that binds specifically to cGMP is cGMP-dependent kinase Iα.

4. The cGMP-visualizing probe of any one of claims 1 to 3, wherein the chromophores are cyan fluorescent protein linked to the N-terminal of the polypeptide and yellow fluorescent protein linked to the C-terminal of the polypeptide.

5. A method for detecting and quantifying cGMP, which comprises:
making the cGMP-visualizing probe of any one of claims 1 to 4 coexist with cGMP; and
measuring the change in the fluorescence wavelength.

6. The method for detecting and quantifying cGMP of claim 5, which comprises introducing a polynucleotide expressing the cGMP-visualizing probe of any one of claims 1 to 4 into cells, whereby making the cGMP-visualizing probe coexist with cGMP.

7. The method for detecting and quantifying cGMP of claim 5, which comprises:

introducing a polynucleotide expressing a cGMP-visualizing probe of any one of claims 1 to 4 into cells; and performing ontogenisis from the non-human animal totipotent cells, thereby making the cGMP-visualizing probe coexist with cGMP in every cell of the resultant animal or its offspring.

8. A non-human animal or offspring thereof, which is obtained by introducing a polynucleotide expressing a cGMP-visualizing probe of any one of claims 1 to 4 into cells and performing ontogenisis from the non-human animal totipotent cells.

9. A method for screening a substance, which comprises introducing a test sample containing the substance into a non-human animal or offspring thereof of claim 8, and quantifying cGMP in the cells of the non-human animal or offspring thereof.